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 Second Progress Report of the Joint
 Committee of the Real Property Division, American Bar Association and
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 on Land Surveys and Titles. 1065.
- Humphrey, C. B.
 Second Progress Report of the Joint
 Committee of the Real Property Division, American Bar Association and
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- Hussey, Harold D. Elastic stability. 447.
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- Jacobs, Joseph Masonry dams. 1081.
- Jarvis, C. S.
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- Jens, S. W.
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- Johnson, Arthur F.
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- Johnson, Joe W. Bed-load movement. 1173.
- Johnston, Bruce
 "Analysis of Building Frames with Semi-Rigid Connections." 405.
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- Johnston, C. T.
 Second Progress Report of the Joint
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- Jones, Barton M. Foundation experiences, TVA. 148.
- Julian, O. G.
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- Justin, Joel D. Fort Peck slide. 723.
- Kalinske, A. A. Bed-load movement. 1302.
- Kilcawley, E. J. Soil investigations. 1147.
- Kinzie, Robert A., Jr. Expansion of concrete. 1106.
- Kissam, Philip
 Second Progress Report of the Joint
 Committee of the Real Property Division, American Bar Association and
 the Surveying and Mapping Division,
 American Society of Civil Engineers,
 on Land Surveys and Titles. 1065.
- Krynine, Dimitri P.
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- Lane, E. W. Missouri River. 1743.
- Langbein, W. B. Flood routing. 1763.
- Lash, S. D. Building frames. 1339.
- Laurgaard, O.
 "Crack Prevention Program, Hiwassee
 Dam." 327. Discussion. 1910.
- Lautz, M. W.
 Progress Report of the Committee on the
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- Lee, Charles H. Use of water. 1359.
- Legget, Robert F. Pile formulas. 1951.
- Leman, V. E. Cavitation in conduits. 654.
- Lewis, Harold M. Grand Central terminal. 438.
- Lewis, James S., Jr. Foundation experiences, TVA. 267. Masonry dams. 237.
- Lewis, M. R. Irrigation water. 1495.
- Lienhard, Frederick Elastic stability. 867.

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Linsley, Ray K., Jr. Flood routing. 1567. "Method of Predicting the Runoff from Rainfall." 1023.

Lord, Arthur R.

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Loutzenheiser, D. W.

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Lowry, Robert L., Jr.
"Consumptive Use of Water for Agriculture." 595.
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Lyman, A. K. B.
"Compaction of Cohesionless Foundation Soils by Explosives."

Lyman, Charles M.

yman, Charles M.
Second Progress Report of the Joint
Committee of the Real Property Division, American Bar Association and
the Surveying and Mapping Division,
American Society of Civil Engineers,
on Land Surveys and Titles. 1065.

McCullough, C. B. Self-anchored suspension bridge. 1292.

McHenry, Douglas

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McHugh, F. Dodd "Cost of Public Services in Residential Areas." 991.

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McNown, John S. Bed-load movement. 1314.

Madsen, I. E.

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Mann. Ralph H.

Progress Report of the Committee on the Bearing Value of Pile Foundations on Pile-Driving Formulas. 853.

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Martin, Evan S.

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Martin, Park H. Rural highways. 1880.

Mason, John G.

Progress Report of the Committee on the Bearing Value of Pile Foundations on Pile-Driving Formulas. 853. Discussion. 1541.

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'Timber Friction Pile Foundations." 1657

Maugh, L. C.
"Moments in Continuous Rectangular Slabs on Rigid Supports."

Meehan, A. J. Grand Central terminal. 133. Self-anchored suspension bridge. 945.

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Merriam, Carroll F. Cavitation in conduits. 660. Miller, W. A. Vierendeel truss. 1164.

Mitchell, Adolphus

"Design of Acceleration and Deceleration Lanes." 369. Discussion. 1921.

Progress Report of the Committee on the Bearing Value of Pile Foundations on Pile-Driving Formulas. 853.

Moisseiff, Leon S.

Earthquake stresses. 885. Elastic stability. 867.

Moore, Walter L.

"Energy Loss at the Base of a Free Over-fall." 1697.

Moore, William W. Pile formulas. 1939.

Morris, Clyde T. K-percentage method. 1565.

Morris, Robert M.

"Operation Experiences, Tygart Reservoir," 569.

Mount, Edward H.

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Mousson, J. M. Cavitation in conduits, 1124.

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"Some Economics of Airports." 153.

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Parker, Theodore B.

'Allocation of the Tennessee Valley Authority Projects." 1813.

Patton, R. G.
Second Progress Report of the Joint
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the Surveying and Mapping Division,
American Society of Civil Engineers,
on Land Surveys and Titles. 1065.

- Paul, Charles H. Masonry dams. 1081.
- Paxson, Glenn S. Concrete in sea water. 689.
- Peery, David J.
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- Peterson, Dean F., Jr. Building frames. 1342.
- Pickworth, J. W.
 Progress Report of the Committee on the
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- Pillsbury, Arthur F.
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- Pollyka, Jaroslav J.
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- Posey, C. J. Steel rigid frames. 127.
- Post, Clarence W. Public works. 695.
- Powell, Ralph W. Sprinkling systems for irrigation. 1169.
- Proctor, Carlton S.
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- Raab, Norman C. Earthquake stresses. 1109.
- Ramser, C. E.
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- Randolph, E. S. Cavitation in conduits. 658.
- Rathbun, J. Charles Stress measurements. 1184.
- Rellly, Thomas L.
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- Rhodes, R. F.
 Progress Report of the Committee on the
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- Rich, George R. Complementary energy. 703.
- Richards, N. A.
 Progress Report of the Committee on the
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- Richards, William H., Jr. Surveyor and law. 1507.
- Richart, F. E. Concrete and reinforced concrete. 1096.
- Rights, T. B. Concrete in sea water. 1757 Soil investigations. 1454.
- Roberts, F. C., Jr. Sewage treatment. 501.
- Rodhouse, T. J., Jr. Land surveys and titles. 1771.
- Ross, Robert M. Foundation experiences, TVA. 270.
- Rouse, Hunter Cavitation in conduits. 870.

- Rowen, R. W. Sewage treatment. 1372.
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- Ruff, Charles F. Station-year determinations. 480.
- Rule, Rhodes E. Use of water. 1349.
- Ryan, Alfred J. Fort Peck slide. 893.
- Schafmayer, A. J. Runoff determinations. 1471.
- Scharff, Maurice R.
 "Fundamental Aspects of the Depreciation Problem: Foreword." 1612.
- Scheible, Albert Ed. Public works. 937.
- Schroepfer, George J.

 "Experiences in Operating a ChemicalMechanical Sewage Treatment Plant."

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- Schuleen, Emil P. Cavitation in conduits. 1725 Pennsylvania floods. 243.
- Scofield, C. S. Irrigation water. 1385.
- Seelye, Elwyn E. Concrete and reinforced concrete. 884.
- Sheridan, Arthur V. Grand Central terminal. 295.
- Sherlock, R. H. Concrete and reinforced concrete. 729.
- Sherman, LeRoy K. Flood routing. 1579. Rainfall-runoff prediction. 1769. Runoff determinations. 1469.
- Runoff determinations. 1468
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- Smith, Lawrence T.
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T

- Smith, Nelson Lee Depreciation problems. 1873.
- Smith, Waldo E. Pennsylvania floods. 873. Station-year determinations. 887.
- Smith, Wayne W. Building frames. 1177.
- Snyder, Franklin F. Rainfall-runoff prediction. 1935.
- Soucek, E. San Gabriel Dam No. 1. 1783.
- Sourochnikoff, Basil Plastic theory. 262.

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Second Progress Report of the Joint
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nts.

Steinberg, S. S.
Second Progress Report of the Joint
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Progress Report of the Committee on the
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Second Progress Report of the Joint
Committee of the Real Property Divislon, American Bar Association and
the Surveying and Mapping Division,
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on Land Surveys and Titles. 1065.

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Upson, Maxwell M. Pile formulas. 1947.

van Buren, Maurice P. Building frames. 949. Continuous slabs. 1193.

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Viele, Dorr Second Progress Report of the Joint Committee of the Real Property Division, American Bar Association and the Surveying and Mapping Division, American Society of Civil Engineers, on Land Surveys and Titles. 1065. Discussion. 1556.

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Second Progress Report of the Joint
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the Surveying and Mapping Division,
American Society of Civil Engineers,
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Wallis, William Richard Concrete and reinforced concrete. 883.

Walls, J. A. "Relationship to Regulated Industry." 1613,

Wan, Conrad C. Building frames. 1177.

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Waugh, W. R. Crack prevention program. 1323.

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Progress Report of the Committee on the
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Webb, D. C.
Progress Report of the Committee on
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Weiner, Bernard L. Public works. 934.

Wendt, Edwin F.
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- Whipple, William, Jr.
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- White, Lazarus
 Progress Report of the Committee on the
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- Whitney, Charles S. Elastic theory. 1250.
- Wilgus, William J. Grand Central terminal. 718. Public works. 932.
- Williams, Clement C. Pile formulas. 1793.
- Williams, G. M. Concrete in sea water. 921.
- Williams, Gordon R. Pennsylvania floods. 240. Use of water. 1502.
- Wilson, Warren E.
 "Mechanics of Flow, with Noncolloidal,
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- Winfrey, Robley "Relationship to Public Works and Government Finance." 1631.

- Winter, George "Lateral Stability of Unsymmetrical Structural Elements in Bending." 1851.
- Wisler, C. O.
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 1053.
- Witmer, Francis P. Cantilever problem. 1348. "Wind Stress Analysis by the K-Percentage Method." 961.
- Witt, J. C. Expansion of concrete. 903.
- Wood, Howard C. Earthquake stresses. 1109.
- Woods, Hubert Expansion of concrete. 671.
- Woolf, Abraham Pile formulas. 1547.
- Woster, H. C. Flood routing. 1766.
- Young, Dana
 "Bending Moments in the Walls of Rectangular Tanks." 1683.
- Zick, Leonard P., Jr. Building frames. 1177.

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